SCOPE OF THE TEST PLAN

This test plan is the initial test record document of a complete test history package for the Arizona Health Care Cost Containment System (AHCCCS) ISD implementation of the Health Insurance Portability and Accountability Act (HIPAA) Transactions and Code Sets (TCS) Project. The purpose of the test plan is to define the overall testing strategy/approach for the project and detailed test scenarios/test cases to be utilized in the testing.

This document serves as the baseline for testing the HIPAA TCS Project remediation and translation of the AHCCCS/MQD PMMIS/HPMMMIS systems. It defines how the system, integration, certification and business-to-business (B2B) testing will be organized, managed, and implemented, as well as to provide the basis for an effective and efficient testing process including interfaces with all external entities that will play a role in testing (i.e., all AHCCCS/MQD business trading partners).

This is an abstract of the AHCCCS/MQD Test plan. If you would like to receive a copy of the detailed test plan please email us at AHCCCSHIPAATestTeam@AHCCCS.state.az.us.

TESTING STRATEGY

Our testing strategy implements the core use of a universe of test scenarios and test cases designed to detect any errors within the software. The HIPAA TCS testing effort is divided into three components (see Figure 1, HIPAA TCS Project Overview Test Workflow).

- **Component 1 – HIPAA TCS Project Test Plan Document**, includes the development of the initial test plan document and subsequent updates detailing all test scenarios, test cases, check lists and any other procedural documentation pertaining to testing execution and reporting. This is intended to be a “living document” evolving as testing activities progress and are completed.
- **Component 2 – Test Environment Validation**, includes activities associated with the validation of the test environment to be used for all phases of HIPAA TCS Project testing. Environment functionality and database appropriateness will be validated. A workflow diagram of this effort is depicted in Figure 2, Component 2 – Test Environment Validation Detailed Workflow.
- **Component 3 – Transaction Testing**, includes system/integration, certification and B2B testing on an iterative transaction basis for all AHCCCS trading partners. Integration testing is strictly internal, while certification testing is internal with Claredi interface. External B2B testing is comprised of pilot testing followed by B2B testing with all AHCCCS/MQD trading partners. A workflow diagram of this effort is depicted in Figure 3, Component 3 – Transaction Testing Detailed Workflow.

Figure 1. HIPAA TCS Project Overview Test Workflow

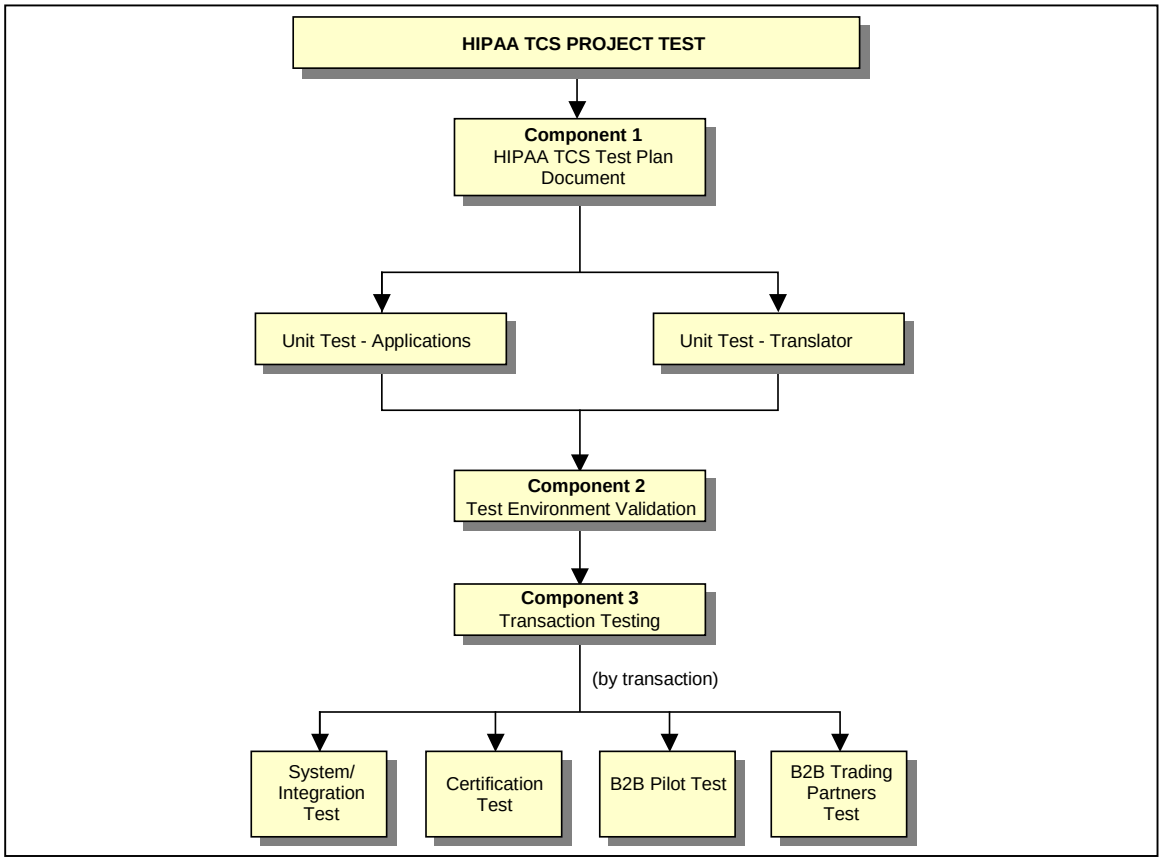
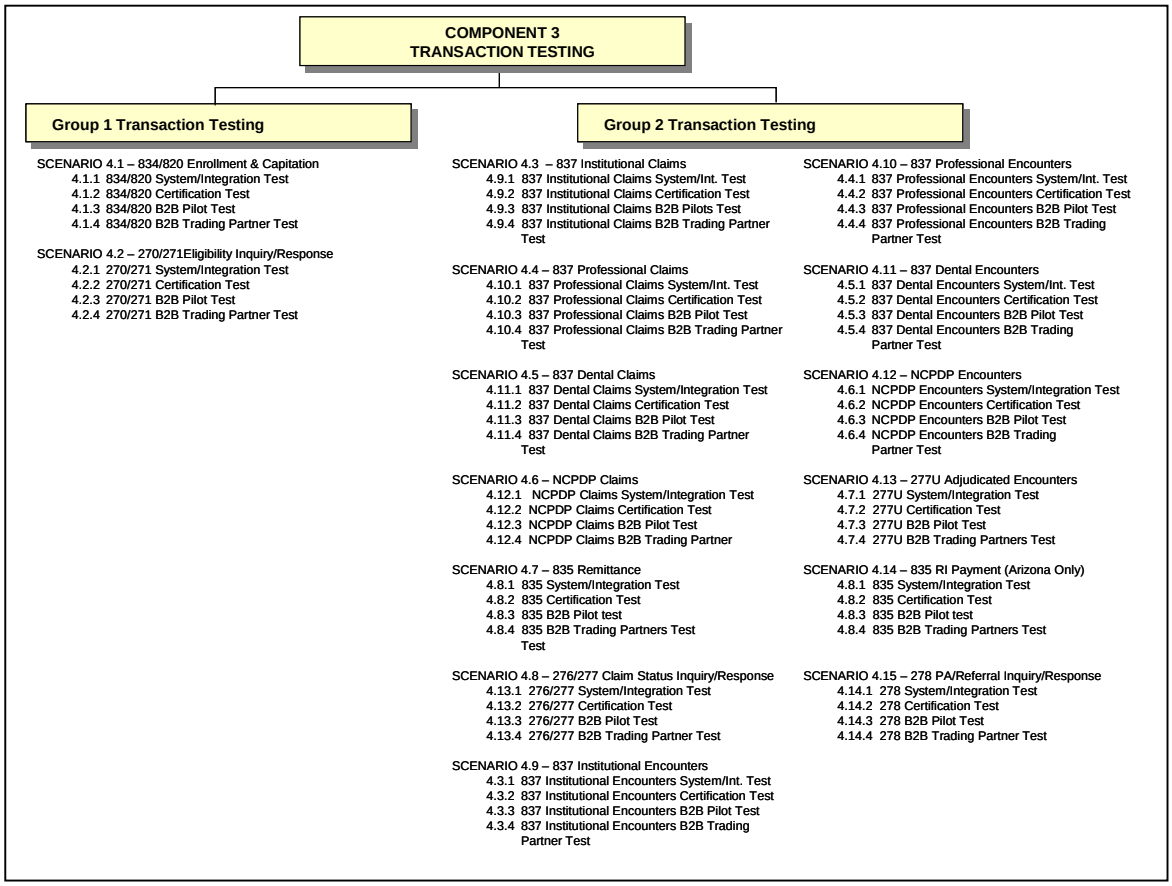


Figure 2. Component 2 – Test Environment Validation Detailed Workflow (TBD)

Figure 3. Component 3 – Transaction Testing Detailed Workflow



The AHCCCS/MQD HIPAA TCS Project test strategy incorporates two major assumptions:

- **Unit Testing** – The two categories of unit testing will be completed in their entirety by the appropriate development team: 1) Applications Remediation Unit Test, and 2) Translator Unit Test.
- **User Acceptance Testing (UAT)** – UAT procedures will be integrated into test cases for Transaction Testing at both the Integration and B2B levels. The intent is to accomplish these activities from the user or business process perspective, due to project time constraints.

The Test Scenarios

Each system impacted requirement will have no less than one scenario associated with it. These scenarios shall utilize all information available to support the test including, requirements, business rules and design materials.

Each scenario/test case shall have identifying criteria associated with it in regards to data tested, iterations of the test, tester, affected requirements, etc. Moreover, each scenario will detail the system environment, data specifics, dependencies on other scenarios, and requirement reference.

Problems will be entered into the Problem Report Tracking database using established procedures. If a scenario or process fails during any phase of testing and a problem report is recorded, the development teams are given appropriate time to fix, retest and migrate the solution to the test environment. After the problem report is resolved, the scenario shall be re-executed with the latest version of software/hardware and documented on the scenario sheet as a subsequent iteration of test.

Entrance/Exit Criteria

Test Acceptance criteria for all phases of HIPAA testing are based on a scheme that specifies three priorities of test incident or problem. The system is deemed to be acceptable if there are no outstanding Priority 1 or 2 problems after a full execution of all scripted scenarios. The priorities are defined as follows:

- **Priority 1/Critical.** The problem causes the system to crash or "freeze" indefinitely or one component of the system crashes or freezes; the system would cause violation of Federal or state law or regulations; the system prevents access to or execution of a mission critical component by all users. Priority 1 problems will be handled and tracked on an immediate basis.
- **Priority 2/High.** The system fails to perform a critical function correctly and there is no acceptable workaround within the system's other capabilities that would enable users to successfully complete this function. Priority 2 problems will be handled and tracked on a daily basis.
- **Priority 3/Low.** The problem creates an inconvenience or nuisance to the user without preventing successful completion of mission critical functions, is a minor or existing imperfection in the system, or if mission critical functions are prevented there is an agreeable workaround. Priority 3 problems will be monitored and tracked on a daily basis. Escalation will occur as merited.
- **Priority 4/Future Enhancement.** The problem or requirement is a desired future enhancement to the system. Priority 4 problems will be logged and tracked throughout the project and should result in future SSR's. No escalation will occur.

The testing of a transaction will be considered ready to progress to the next phase or sequential scenario on testing when the above criteria are met – that there are no Priority 1 or 2 level type defects found during test. Throughout the entire period of software development up through the completion of Integration Testing, the development teams will correct as many Priority 3 and 4 problems as remaining schedule allows.

Corrective Action

The corrective action process that will be employed on the HIPAA TCS Project consists of the following activities:

1. Documentation and reporting of discrepancies and planned corrective actions through a Testing Problem Report.
2. Cause and classification of discrepancies or reasons for changes.
3. Corrective action definition and ranking.
4. Corrective action approval.
5. Corrective action tracking and verification.

Test Progress/Outcomes Reporting

A series of two test reports will be completed for each transaction: 1) the Internal Transaction Readiness Test Report, and 2) Final Transaction Test Report.

At the conclusion of AHCCCS/MQD internal testing for each transaction, i.e. through Certification, the Internal Transaction Readiness Test Report will be produced summarizing all AHCCCS/MQD internal testing and therefore readiness to continue to external B2B testing. The Final Transaction Test Report will be developed following the completion of defined B2B testing for each transaction. Both reports will describe the degree to which the objectives were accomplished, how well the software was validated, and other significant results. As-run test procedures and all test and analysis data will be retained and be available for review upon request.

TESTING APPROACH

The testing approach describes the test environment and testing phases incorporated in the HIPAA TCS Project test effort.

Unit testing will take place in the developmental environment for both Applications and Translator unit tests. After notification by the development teams, the final configurations will be migrated into the test environment for Arizona and Hawaii. Any rework by development testing as a result of test discrepancies will be performed in the appropriate development environment and then again be migrated into the test environment as before.

Test Environment.

The Database team will create unique standalone test environments. This process follows current ISD standards. All source-code, database schemas, control files, software documentation, and other components will be maintained in version control products. Developers, Database Administrators, and others will have specific access rights based upon their needs.

Component 2 – Test Environment Validation (Appendix E of the detailed test plan) documents the test environment to be exercised during the life of the test cycle. Control of the testing environment is achieved by installing test software with strict and meticulous standard operating procedures. The HIPAA Test Environment Team has been established comprised of Operations, Applications, Database, Configuration Management, and Test personnel to facilitate the collaborative development of the test

environment. The test bases will contain created data and data copied from the current production to support system/integration, certification, and B2B testing.

Test Phases

The HIPAA TCS Project will divide each testing scenario into six general phases:

1. **Test Planning.**
   - Define test requirements,
   - Import allocated test requirements from design documentation,
   - Define test procedures,
   - Link (associate) the test procedure with a specific test requirement,
   - Define regression data test parameters,
   - Finalize test environment setup and processes.
2. **Test Development.**
   - Finalize test and Problem Report tracking procedures,
   - Define test cases/scenarios.
3. **Test Execution.**
   - Execution of test scenarios/test cases,
   - Execution of all related batch processes,
   - Execution of all internal/external interfaces, when appropriate,
   - Execution of regression test plans, when appropriate,
   - Update and re-execution of a test scenario/test case (retest) to reflect a fix to a reported test discrepancy,
   - Document Problem Reports as necessary.
4. **Problem Report Tracking.**
   - Using the Problem Reporting tracking database to generate problem report summary information,
   - Compiling metrics.
5. **Summary Reporting and Analysis.**
   - Prepare a detailed Test Results Progress report,
   - Prepare a detailed Problem Report Listing report,
   - Provide information to support Executive Management weekly Status Summary meetings.

   The Project Test Manager and Test Team Lead will produce test results progress and Problem Report Listing reports on no less than a weekly basis. Reports will include:
   - **Cross Tab Reports -** display Problem Report information by age, component, transaction, and assignment,
   - **Hierarchy Reports -** display testing status according to test requirements and test coverage, and progress to the stated test calendar,
   - **Listing Reports -** displays a variety of information as defined.

Roles and Responsibilities

The HIPAA TCS Project Test Manager will use available resources to help plan each testing activity and assemble key components (e.g. documentation, personnel and

hardware) to ensure a successful and as needed a repeatable process. A database of test plans with State indicator will be created to facilitate a hierarchy of test requirements and cross-references the hierarchy to specific test cases, procedures, and any Problem Reports found while testing.

The Test Team Lead will track all Problem Reports in the Problem Report tracking database. The database will contain all collected data/information about each problem in software and hardware, including a description, symptoms, and severity.

Testers are responsible for entering Problem Report details into a hardcopy form, and for the attachment of appropriate documentation. These hardcopy Problem Report forms can then be routed to the appropriate team leads for review and documentation, then on to the Test Team Lead for entry into the Problem Reporting database, and routed to the appropriate Project Manager for resolution.

The Development Teams members are responsible for reviewing the defect, and determining appropriate solution. After defects have been corrected, it is up to the individual developer to route the annotated Problem Report to the Test Team Lead for incorporation into the database, routing for retest, and archive files.

TESTING SCHEDULES

Two forms of test schedules will be maintained:

- **HIPAA TCS Project Schedule – Test.** This includes the Test section of the overall HIPAA TCS Project Schedule in MS Project format.
- **HIPAA TCS Project Detailed Test Calendars.** Test Calendars will be produced for the Test Environment Validation and Transaction Testing components. See the Testing Calendars section of this website for the latest testing schedule plans.

PROGRESS METRICS

During all the testing phases, metrics will be used to show testing progress of all test plans and scenarios, and the overall project. The following two metrics will be tracked:

- **Percentage Tested.** This metric will be measured and reported by tracking the number of tests started and successfully completed at any given time during the testing phase, in real numbers and in percentage.
- **Numbers of Problems Encountered within Priority Bands.**

These metrics help to provide a testing progress status for the HIPAA TCS Project Manager, ISD Management, and external trading partners. This website posts a current high level status for test progress.

PROCESS/JOB FLOWS

The following process/job flows have been developed as a basis for establishing test scenarios/cases.

Rosters

- Rosters – Daily
- Rosters – Monthly

Encounters

- Encounters – New Day
- Encounters – Pend Correction

FFS

- FFS – Daily
- FFS – Weekly

Reinsurance